



Roy F. Weston, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
908-225-6116 • Fax 908-225-7037

244389



SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-01540

TRANSMITTAL MEMO

To: Jeff Bechtel, OSC
Removal Action Branch, U.S. EPA Region II

From: Smita Sumbaly, Data Reviewer
START Region II

Subject: Color Technology Site
Data Validation Assessment

Date: December 17, 1997.

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TAL metals	11 samples
Full TCL	21 samples
- Matrices and Number of Samples

Soil	11 samples
Wipe	10 samples
- Sampling date: September 19, 1997.

The final data assessment narrative and original analytical data package are attached.

cc: START PM Michael Mahnkopf
START FILE TDD #:02-97-09-0013
 TDD #:02-97-05-0021
 PCS #:2117

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: December 16, 1997

TO: Jeff Bechtel, OSC
USEPA Region II

FROM: Smita Sumbaly &
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	<u>I</u> <u>VOA</u>	<u>II</u> <u>BNA</u>	<u>III</u> <u>Pest/PCBs</u>	<u>IV</u> <u>_____</u>
Acceptable as Submitted	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
Acceptable with Comments	<u>X</u>	<u>X</u>	<u>X</u>	<u>_____</u>
Unacceptable, Action Pending	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
Unacceptable	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>

Data Reviewed by:

Smita Sumbaly

Date: 12/16/97

Approved By:

Jim Love

Date: 12/17/97

Area Code/Phone No.:

(732) 225-6116

NARRATIVE

CASE No. 2117

SITE NAME: Color Technology Site

60 Cornell Blvd, Somerville, New Jersey.

Laboratory Name: Industrial Corrosion Management, Inc. (ICM)

INTRODUCTION:

The laboratory's portion of this Case consisted of 21 samples collected on September 19, 1997.

The laboratory reported problem(s) with the receipt of these samples.

Lab did not performed volatile analysis on wipe samples due to analytical problems with hexane preservative.

The laboratory reported No problems with the analyses of samples for Full TCL(VOA/BNA/Pest/PCBs) - Organic Compounds.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the forms followed.

Evaluation by Fraction

I. Volatile (VOAs)

<u>Y</u> Holding Time	<u>Y</u> MS/MSD
<u>Y</u> GC/MS Tuning	<u>Y</u> Compound ID (HSL, TIC)
<u>Y</u> Calibration, Initial	<u>Y</u> Spectra Quality
<u>Y</u> Calibration, Continuing	<u>Y</u> Standards
<u>Y</u> Blank	<u>Y</u> Chromatography
<u>Y</u> Surrogate Recovery	<u>Y</u> Data Completeness
<u>Y</u> Laboratory Fortified Blank	<u>Y</u> Laboratory Storage Blank

Comments:

1. Refer to Data Assessment Narrative.

II. Base Neutral/Acids (BNAs)

<u>Y</u> Holding Time	<u>Y</u> MS/MSD
<u>Y</u> GC/MS Tuning	<u>Y</u> Compound ID (HSL, TIC)
<u>Y</u> Calibration, Initial	<u>Y</u> Spectra Quality
<u>Y</u> Calibration, Continuing	<u>Y</u> Standards
<u>Y</u> Blank	<u>Y</u> Chromatography
<u>Y</u> Surrogate Recovery	<u>Y</u> Data Completeness

Comments:

1. Refer to Data Assessment Narrative.

III. Pesticides

<u>Y</u> Holding Times	<u>Y</u> Calibration Linearity
<u>Y</u> Instrument Performance	<u>Y</u> Blank
<u>Y</u> Surrogate Recovery	<u>Y</u> Retention Time Window
<u>Y</u> MS/MSD	<u>Y</u> Analytical Sequence
<u>Y</u> Compound ID (HSL, TIC)	<u>Y</u> RT Check for TCX
<u>Y</u> Chromatography	

Comments:

1. Refer to Data Assessment Narrative.

REGION II START DATA ASSESSMENT REPORT

RFP Project #: 2117

Case #: NA

SDG #: CTS01

LAB: Industrial Corrosion Management, Inc.

LAB Code: ICM

SITE: Color Technology

Analysis: TCL Organic Parameters

Matrix:

Contractor: START

Reviewer: Smita Sumbaly

Water: NA

Soil/Sediment: 11

Wipe: 09

CERCLIS ID #:

The current Functional Guidelines for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detects), "R" (unusable), or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Analytical data qualified as "JN" or "R" may not be used to demonstrate compliance with Toxicity Characteristic or Land Ban Regulations.

Reviewer's
Signature:

Smita Sumbaly

Date: 12/17/1997

Verified By:

Date: / /19

On 19 September 1997, USEPA Region II - personnel collected 11 surface soil and 10 wipe samples for Target Compound List (TCL) organic analyses from the Color Technology Site, Somerville, New Jersey. Within twenty-four hours of collection, samples were picked up by Industrial Corrosion Management (ICM), Randolph, New Jersey. The laboratory verified that samples were received intact, properly custody sealed, and refrigerated (sample cooler temperature recorded at 2.8°C).

Target Compound List (TCL) organic analyses were performed following the Contract Laboratory Program (CLP) Statement of Work (SOW) number OLM03.1.

Client identification (ID) and laboratory ID numbers:

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>
CTS01	272610	Soil
CTS02	272611	Soil
CTS03	272612	Soil
CTS04	272613	Soil
CTS05	272614	Soil
CTS06	272615	Soil
CTS07	272616	Soil
CTS08	272617	Soil
CTS09	272618	Soil
CTS010	272619	Soil
CTS011 ¹	272620	Soil
CTW01	272621	Wipe
CTW02	272622	Wipe
CTW03	272623	Wipe
CTW04	272624	Wipe
CTW05	272625	Wipe
CTW06	272626	Wipe
CTW07	272627	Wipe
CTW08	272628	Wipe
CTW09 ²	272629	Wipe
CTW10(BLANK)	272630	Wipe

¹ Sample CTS011 is a field duplicate sample of sample CTS01.

² Sample CTW09 is a field duplicate sample of sample CTW01.

A.2.2 Data Assessment (continued):

1. HOLDING TIMES:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

TCL Data

VOA - The following data were qualified as estimated "J" or rejected "R" due to exceeding holding time criteria:

<u>Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Analyzed</u>	<u>Qualifier</u>	<u># Compounds</u>
CTS05	Soil	09/19/97	09/29/97	"J"	33

Note: If properly preserved, aqueous samples maintained at 4°C must be analyzed within fourteen (14) days of collection. If unpreserved, aqueous samples must be analyzed within seven (7) days for aromatic hydrocarbons. Soil/Solid samples must be analyzed within ten (10) days of collection.

BNA - The following data were qualified as estimated "J" or rejected "R" due to exceeding holding time criteria:

<u>Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>	<u>Qualifier</u>	<u># Compounds</u>
------------------	---------------	---------------------	-----------------------	----------------------	------------------	--------------------

Data met the QC criteria

Pest/PCBs - The following data were qualified as estimated "J" or rejected "R" due to exceeding holding time criteria:

<u>Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>	<u>Qualifier</u>	<u># Compounds</u>
------------------	---------------	---------------------	-----------------------	----------------------	------------------	--------------------

Data met the QC criteria

Note: Continuous extraction of water samples must be started within seven (7) days of the date of collection. Soil/Sediment/Solid samples must be extracted within ten (10) days of collection. Extracts must be analyzed within forty (40) days of extraction.

A.2.2 Data Assessment (continued):

2. BLANK CONTAMINATION:

Quality Assurance (QA) blanks [i.e., method, trip, field or rinse blanks] are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method Blank Contamination

VOA - The following compounds were qualified as non-detected "U" in the associated samples due to method blank contamination:

<u>Compound</u>	<u>Associated Samples</u>
Methylene Chloride	CTS-01, -03, -06, -08, -09, -10Re, -11, -07Re & -02

VOA - The following TICs were rejected "R" in the indicated samples due to detection in the associated method blank:

<u>TIC</u>	<u>Associated Method Blank</u>	<u>Associated Samples</u>
Column Bleed	VBLKSB VBLKSC VBLKSD	CTS-01 & CTS-06 CTS-04, -06Re, -08Re, -09Re & 10 CTS-08, -09, -10Re, -11, -07Re, -02 & -07

BNA - The following compounds were qualified as non-detected "U" in the associated samples due to method blank contamination:

<u>Compound</u>	<u>Associated Samples</u>
bis(2-Ethylhexyl)phthalate	CTS-04, -04DL, -06, -06DL & -02

BNA - The following TICs were rejected "R" in the indicated samples due to detection in the associated method blank:

<u>TIC</u>	<u>Associated Method Blank</u>	<u>Associated Samples</u>
Ethanol, 2-(2-ethoxyethoxy)-	SBLK26	CTS-10, -05 & -07

Pest/PCBs - The following compounds were qualified as non-detected "U" in the associated samples due to method blank contamination:

Data met the QC criteria

A.2.2 Data Assessment (continued):

- B) Field or Rinse Blank Contamination ("water blanks" or "distilled water blanks" are validated like any other sample)

Full TCL - The following compounds were qualified as non-detected "U" in the associated samples due to rinse blank contamination:

<u>Compound</u>	<u>Associated Samples</u>
Not Applicable	

- C) Trip Blank Contamination

VOA - The following compounds were qualified as non-detected "U" in the associated samples due to trip blank contamination:

<u>Compound</u>	<u>Associated Samples</u>
Not Applicable	

- D) TIC Blank Contamination

VOA/BNA - The following TIC contaminants were rejected "R" in the indicated samples because these compounds are target TCL compounds also present in the associated volatile or semi-volatile fraction analyses:

<u>Fraction</u>	<u>TIC</u>	<u>Samples</u>
BNA	Fluorene	CTS-04
	Benzo (k) Fluoranthene	CTS-04DL
	Pyrene	CTS-06

VOA/BNA - All TICs qualified by the laboratory with a "B" (indicative of method blank contamination) or an "A" (indicative of a common adol laboratory contaminant) were rejected "R".

<u>Fraction</u>	<u>TIC</u>	<u>Samples</u>
VOA	Column Bleed	CTS-05
	Hexane	CTS-03, -03RE, -04, -05, -06RE, -07, -07RE, -08, -08RE, -09, -09RE, -10, -10RE & -11RE

Note: TIC compounds associated with a "best match" spectra and CAS number were qualified as presumptive evidence of a compound at an estimated value "JN" by the data reviewer. TICs not associated with a CAS number were qualified as estimated "J" by the data reviewer in the sample data.

A.2.2 Data Assessment (continued):

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error or missing, all associated data will be classified as unusable "R". The following samples shown were qualified with "R" because of tuning:

VOA/BNA: Data met the QC criteria

A.2.2 Data Assessment (continued):

4. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

A) Response Factor:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the VOA/BNA Target Compound List (TCL) must be ≥ 0.05 in both the initial and continuing calibrations. A value ≤ 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean RRF of the initial calibration or the continuing calibration has a response factor < 0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated "J". All non-detects for those compounds will be rejected "R". The following analytes in the samples shown were qualified because of response factor:

Initial Calibration

VOA - The following compounds were either qualified as estimated "J" (positive values only) or rejected "R" (non-detected "U" values only) in the associated samples because the Initial Calibration Mean RRF value is < 0.05 :

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
-----------------	------------------	-----------------------------

Data met the QC criteria

BNA - The following compounds were either qualified as estimated "J" (positive values only) or rejected "R" (non-detected "U" values only) in the associated samples because the Initial Calibration Mean RRF value is < 0.05 :

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
-----------------	------------------	-----------------------------

Data met the QC criteria

Continuing Calibration

VOA - The following compounds were either qualified as estimated "J" (positive values only) or rejected "R" (non-detected "U" values only) in the associated samples because the Continuing Calibration RRF₅₀ is < 0.05 :

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
-----------------	------------------	-----------------------------

Data met the QC criteria

A.2.2 Data Assessment (continued):

BNA - The following compounds were either qualified as estimated "J" (positive values only) or rejected "R" (non-detected "U" values only) in the associated samples because the Continuing Calibration RRF_{50} is < 0.05 :

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
Data met the QC criteria		

5. CALIBRATION:

B) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be $< 30\%$ and %D must be $< 25\%$. A value outside of these QC limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J"; and non-detects are flagged "UJ". If %RSD and/or %D grossly exceed QC criteria, non-detect data may be qualified "R".

For the PESTICIDE/PCB fraction, if %RSD exceeds 20% for all analytes except for the 2 surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the samples shown were qualified for %RSD and %D:

Initial Calibration

VOA - Positive values of the following compounds were qualified as estimated "J" in the associated samples because the Initial Calibration %RSD is between 30-90% when the mean RRF is > 0.05 :

<u>Compound</u>	<u>Associated Sample(s)</u>
Data met the QC criteria	

BNA - Positive values of the following compounds were qualified as estimated "J" in the associated samples because the Initial Calibration %RSD is between 30-90% when the mean RRF is > 0.05 :

<u>Compound</u>	<u>Associated Sample(s)</u>
Data met the QC criteria	

A.2.2 Data Assessment (continued):

Pest/PCBs - The following compounds were qualified as estimated "J" or rejected "R" in the associated samples because the linearity criteria or the percent relative standard deviation (%RSD) of the Initial Calibration is > 20% for either one or both GC columns:

<u>Compound</u>	<u>Percent Recovery</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
Gamma BHC	22.7 %	"J"	CTS-01, -02, -03, -04, -05, -06, -07, -08, -9, -10, -11, CTW-01, -02, -03, -04, -05, -06, -07, -08, -09 & -10
4'4-DDT	27.5 %	"J"	-01, -02, -03, -04, -05, -06, -07, -08, -9, -10, -11, CTW-01, -02, -03, -04, -05, -06, -07, -08, -09 & -10

Continuing Calibration

VOA - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is between 25-90% when the RRF_{50} is > 0.05:

<u>Compound</u>	<u>Associated Sample(s)</u>
Acetone	CTS-01, -03, -06, -04, -06RE, -03RE, -08RE, -09RE, 10 & -11RE
2-Butanone	CTS-04, -06RE, -03RE, -08RE, -09RE, 10 & -11RE
4-Methyl-2-Pentanone	CTS-04, -06RE, -03RE, -08RE, -09RE, 10 & -11RE
2-Hexanone	CTS-04, -06RE, -03RE, -08RE, -09RE, 10 & -11RE

BNA - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is between 25-90% when the RRF_{50} is > 0.05:

<u>Compound</u>	<u>Associated Sample(s)</u>
Hexachlorocyclopentadiene	CTS-03DL, -01DL, -08DL, -09DL, -10DL, -11DL & CTW-03
3-Nitroaniline	CTS-03DL, -01DL, -08DL, -09DL, -10DL & -11DL
Diethylphthalate	CTS-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -4DL, -05DL, -06DL & -07DL

A.2.2 Data Assessment (continued):

<u>Compound</u>	<u>Associated Sample(s)</u>
4-Chlorophenyl-phenylether	CTS-03DL, -01DL, -08DL, -09DL, -10DL, -11DL, CTS-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, 4DL, -05DL, -06DL & -07DL
4,6-Dinitro-2-methylphenol	CTS-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -04DL, -05DL, -06DL & -07DL
Benzo (g,h,i)perylene	CTW-06, -02RE, -08RE, -05RE, -07DL, -04DL, -01DL 09DL and -03

The following data were not qualified as estimated "J" in the associated samples because the percent difference (%D) of the Continuing Calibration is just outside specified QC Limits:

<u>Fraction</u>	<u>Compound</u>	<u>QC Limits</u>	<u>Associated Sample(s)</u>
BNA	4,6-Dinitro-2-Methylphenol(25.3%)	< 25.0%	CTS-03DL, -01DL, -08DL, -09DL, -10DL & -11DL

Pest/PCBs - The Relative Percent Difference (%RSD) for PEM compound amounts in the continuing calibration verification analyses and/or the RPD amounts in the Individual Standard Mixes of the continuing calibration verification analyses are $\geq 25\%$ for either one or both GC columns. The following compounds were either qualified as estimated "J" or rejected "R" due to exceeding Continuing Calibration QC criteria:

<u>Compound</u>	<u>RPD</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
-----------------	------------	------------------	-----------------------------

Data met QC criteria

- Associated samples are those samples located approximately five (5) samples on either side of the failing PEM sample and/or between the last in-control standard and the next passing standard.

Pest/PCBs - The following compounds were qualified as estimated "J" in the associated samples because the Continuing Calibration %D is between 20-90% for these compounds on the primary GC column:

<u>Compound</u>	<u>Associated Samples</u>
-----------------	---------------------------

Data met QC criteria

A.2.2 Data Assessment (continued):

6. SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/SMC recovery:

VOA - The following compounds were either qualified as estimated "J" or rejected "R" due to surrogate recovery outside specified QC limits:

<u>Surrogate</u>	<u>Recovery</u>	<u>Qualifier</u>	<u>Compounds</u>	<u>Sample(s)</u>
------------------	-----------------	------------------	------------------	------------------

Data met the QC criteria.

BNA - The following compounds were either qualified as estimated "J" or rejected "R" due to surrogate recovery outside specified QC limits:

<u>Surrogate</u>	<u>Recovery</u>	<u>Qualifier</u>	<u>Compounds</u>	<u>Sample(s)</u>
------------------	-----------------	------------------	------------------	------------------

Data met the QC criteria.

Note: Data were qualified because either two (2) base-neutral and/or two (2) acid compounds have recoveries outside specified QC limits and above 10%, or either one (1) base-neutral and/or one (1) acid compound has a percent recovery below 10%.

Pest/PCBs - The following compounds were either qualified as estimated "J" or rejected "R" due to Tetrachloro-m-xylene (TCX) and Decachlorobiphenyl (DCB) surrogate recoveries are both outside specified advisory QC limits (60-150%):

<u>Surrogate</u>	<u>Recovery</u>	<u>Qualifier</u>	<u>Compounds</u>	<u>Sample(s)</u>
Decachlorobiphenyl (DCB)	< 10%	"R"	25	CTS-04
		"J" ¹	03	CTS-04

¹ Positive values only were qualified as estimated "J" in the associated samples.

Surrogate recoveries outside QC criteria (< 10%) may be attributable to the required dilution of the extract during analysis and/or due to matrix interference.

Note: Data were qualified because recoveries for both surrogates are outside specified QC limits and above 10%, or either surrogate has a percent recovery below 10%.

A.2.2 Data Assessment (continued):

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to 100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the -50% to 100% range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated "J", and all non-detects as "UJ" only if the IS area is $< 50\%$. Non-detects are qualified as "R" if there is a severe loss of sensitivity ($< 25\%$ of associated IS area counts).

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction. The following analytes in the samples shown were qualified because of internal standard performance:

VOA - The following compounds were either qualified as estimated "J" or rejected "R" in the associated samples due to exceeding Internal Standard (IS) QC criteria (within -50% to + 100% of the Continuing Calibration 12-hour standard):

<u>Internal Standard</u>	<u>Percent IS Area Count of the 12-Hour Standard</u>	<u>Total Analytes Qualified/Sample</u>	<u>Associated Sample(s)</u>
Bromochloromethane	between -25% to -50%	"J"/13	CTS-03, -03RE, -08RE, -10, -11RE, -08, -10RE, -11, *-07RE & -07
1,4 - Difluorobenzene	between -25% to -50%	"J"/11	CTS-03, -03RE, -08RE, -10, -11RE, -08, -10RE, -11, -07RE & -07
Chlorobenzene-d5	between -25% to -50%	"J"/9	CTS-06, -06RE, -09RE, -10, -09, -10RE, -11, -02
	$< -25\%$	"R"/9	CTS-03, -03RE, 08RE, - 11RE, -08, -07RE & -07

* The sample CTS-07RE was not rejected as "R" because the IS area count of the 12-Hour standard is just below the $< -25\%$:

¹ Positive values only were qualified as estimated "J" in the indicated samples.

A.2.2 Data Assessment (continued):

7. INTERNAL STANDARDS PERFORMANCE (continued):

BNA - The following compounds were either qualified as estimated "J" or rejected "R" in the associated samples due to exceeding Internal Standard (IS) QC criteria (within -50% to + 100% of the Continuing Calibration 12-hour standard):

<u>Internal Standard</u>	<u>Percent IS Area Count of the 12-Hour Standard</u>	<u>Qualifier/Total Analytes Qualified</u>	<u>Associated Sample(s)</u>
Chrysene-d12	between -25% to -50%	"J"/6	CTS-01, -04 & 11 CTW-07, -04, -02, -08, - 05 & -09
	< -25%	"R"/7	CTW-01
Perylene-d12	between -25% to -50%	"J"	CTS-05, -06, -08, -09, - 10, -02 & -04DL, -07DL CTW-10, 02RE, -08RE & -05RE
	< -25%	"R"/7	CTS-01, -03, -04, -07 & -11 CTW-07, -04, -01, -02, - 08, -05, -09, -07DL, - 04DL, -01DL & -09DL

Note: The laboratory indicated in the case narrative that samples exhibited internal standard areas outside QC criteria due to a matrix effect confirmed by repeat analysis.

A.2.2 Data Assessment (continued):

INTERNAL STANDARD AREA OUTLIERS

Sample	Internal Standard VOA Fraction	Area	Lower Limit	Upper Limit	< -25% of the 12-hour Standard
CTS-03	BCM	15236	18213	72852	9106.5
CTS-03	DFB	67158	85114	340456	42557
CTS-03	CBZ	32936	68723	274892	34361.5
CTS-06	CBZ	57533	68723	274892	34361.5
CBZ-06RE	CBZ	67271	72111	288442	36055.5
CTS-03RE	BCM	11366	19485	77940	9742.5
CTS-03RE	DFB	52740	90139	360556	45069.5
CTS-03RE	CBZ	22779	72111	288442	36055.5
CTS-08RE	BCM	12499	19485	77940	9742.5
CTS-08RE	DFB	49892	90139	360556	45069.5
CTS-08RE	CBZ	20655	72111	288442	36055.5
CTS-09RE	CBZ	56670	72111	288442	36055.5
CTS-10	BCM	17976	19485	77940	9742.5
CTS-10	DFB	77973	90139	360556	45069.5
CTS-10	CBZ	48699	72111	288442	36055.5
CTS-11RE	BCM	13829	19485	77940	9742.5
CTS-11RE	DFB	59374	90139	360556	45069.5
CTS-11RE	CBZ	35636	72111	288442	36055.5
CTS-08	BCM	12153	17788	71152	8894
CTS-08	DFB	57111	81086	324344	40543
CTS-08	CBZ	32897	67809	271234	33904.5
CTS-09	CBZ	56066	67809	271234	33904.5
CTS-10RE	BCM	17050	17788	71152	8894
CTS-10RE	DFB	78294	81086	324344	40543
CTS-10RE	CBZ	45482	67809	271234	33904.5
CTS-11	BCM	17700	17788	71152	8894
CTS-11	DFB	78945	81086	324344	40543
CTS-11	CBZ	51372	67809	271234	33904.5
CTS-02	CBZ	60195	67809	271234	33904.5

A.2.2 Data Assessment (continued):

Sample	Internal Standard VOA Fraction	Area	Lower Limit	Upper Limit	< -25% of the 12-hour Standard
CTS-07RE	BCM	8893	17788	71152	8894
CTS-07RE	DFB	42749	81086	324344	40543
CTS-07RE	CBZ	13597	67809	271234	33904.5
CTS-07	BCM	12878	17788	71152	8894
CTS-07	DFB	55406	81086	324344	40543
CTS-07	CBZ	22451	67809	271234	33904.5

INTERNAL STANDARD AREA OUTLIERS

Sample	Internal Standard BNA Fraction	Area	Lower Limit	Upper Limit	< -25% of the 12-hour Standard
CTS-01	CRY	29886	38566	154264	19283
CTS-01	PRY	9624	34691	138762	17345.5
CTS-03	PRY	10894	34691	138762	17345.5
CTS-04	CRY	31024	38566	154264	19283
CTS-04	PRY	13884	34691	138762	17345.5
CTS-05	PRY	22541	34691	138762	17345.5
CTS-06	PRY	23137	34691	138762	17345.5
CTS-07	PRY	15933	34691	138762	17345.5
CTS-08	PRY	25672	34691	138762	17345.5
CTS-09	PRY	24925	34691	138762	17345.5
CTS-10	PRY	18176	34691	138762	17345.5
CTS-11	CRY	27741	38566	154264	19283
CTS-11	PRY	11466	34691	138762	17345.5
CTS-02	PRY	32355	34691	138762	17345.5
CTS-04DL	PRY	33013	34691	138762	17345.5
CTS-07DL	PRY	30710	34691	138762	17345.5

A.2.2 Data Assessment (continued):

INTERNAL STANDARD AREA OUTLIERS

Sample	Internal Standard BNA Fraction	Area	Lower Limit	Upper Limit	< -25% of the 12-hour Standard
CTW-10	PRY	19789	26387	105548	13194
CTW-07	CRY	22065	34616	138462	17308
CTW-07	PRY	13172	26387	105548	13194
CTW-04	CRY	20261	34616	138462	17308
CTW-04	PRY	13099	26387	105548	13194
CTW-01	CRY	16485	34616	138462	17308
CTW-01	PRY	10925	26387	105548	13194
CTW-02	CRY	18812	34616	138462	17308
CTW-02	PRY	10719	26387	105548	13194
CTW-08	CRY	17549	34616	138462	17308
CTW-08	PRY	10516	26387	105548	13194
CTW-05	CRY	18439	34616	138462	17308
CTW-05	PRY	11877	26387	105548	13194
CTW-09	CRY	17351	34616	138462	17308
CTW-09	PRY	11219	26387	105548	13194
CTW-02RE	PRY	37963	51133	204532	25566
CTW-08RE	PRY	35375	51133	204532	25566
CTW-05RE	PRY	44533	51133	204532	25566
CTW-07DL	PRY	20511	51133	204532	25566
CTW-04DL	PRY	21285	51133	204532	25566
CTW-01DL	PRY	22823	51133	204532	25566
CTW-09DL	PRY	21890	51133	204532	25566

A.2.2 Data Assessment (continued):

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the Tentatively Identified Compounds (TICs) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. The following analytes in the samples shown were qualified for compound identification:

The following compounds were qualified as estimated "J" in the indicated samples because they could not be chromatographically resolved:

<u>Fraction</u>	<u>Compounds</u>	<u>Samples</u>
-----------------	------------------	----------------

Data met the QC criteria.

A.2.2 Data Assessment (continued):

B) PESTICIDE FRACTION:

The retention time of the reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract. The percent difference (%D) of the positive results obtained on the two GC columns would be $\leq 25\%$. The following analytes in the samples shown were qualified because of compound identification:

Pest/PCBs - The following detected compounds were qualified due to a percent difference (%D) between the primary and confirmation columns $> 25\%$:

<u>Compound</u>	<u>%D</u>	<u>Qualifier</u>	<u>Sample(s)</u>
beta-BHC	between 25-50% between 50-90%	"J" "JN"	CTS-03, -06, -07 CTS-04
delta-BHC	between 50-90%	"JN"	CTS-06
4,4'-DDD	between 50-90%	"JN"	CTS-02, -04, -06
4,4'-DDT	between 50-90%	"JN"	CTS-06
Aroclor-1254	between 25-50% between 50-90%	"J" "JN"	CTS-02, -04 ¹ , -10 & CTW-04 CTS-08

¹ This sample was previously qualified as estimated "J" due to surrogate recovery criteria.

Pest/PCBs - Due to professional judgement, the lower of two positive values generated by the laboratory from the primary and confirmation column analyses was used to report final results for the following pesticide compounds:

<u>Compound</u>	<u>Primary Column Value</u>	<u>Confirmation Column Value</u>
-----------------	-----------------------------	----------------------------------

No qualification was required based on this criteria.

Note: During the initial calibration sequence, absolute retention times are determined for all single response pesticides, the surrogates, and at least three major peaks of each multi-component analyte. Windows are centered around the mean absolute retention time for the analyte established during the initial calibration. Analytes are identified when peaks are observed in the retention time window for the compound on both GC columns. The quant reports listed many potential pesticide compounds for consideration. Comparison of the sample retention times to the retention time windows established during the initial calibration revealed that no additional pesticide compounds were detected in the associated samples. In addition, no shifts for surrogate compound retention times were noted to occur that might require consideration of compounds outside respective retention time windows.

A.2.2 Data Assessment (continued):

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data. The following analytes, for the samples shown, were qualified because of MS/MSD:

The laboratory indicated in the case narrative that sample CTS-02 for soil samples, CTW-10 for wipe samples and CTS-05 for med-conc. VOA samples were used as the original to prepare the duplicate matrix spikes.

VOA - The following sample data were either qualified as estimated "J" or rejected "R" due to exceeding duplicate spike recovery QC criteria:

<u>Original Sample</u>	<u>Spike Recovery</u>	<u>Qualifier</u>	<u>Compound(s)</u>
CTS-05(med-conc.)	< 10%	"J" ¹	Toluene

¹ Previously qualified due to holding time criteria.

BNA - The following sample data were either qualified as estimated "J" or rejected "R" due to exceeding duplicate spike recovery QC criteria:

<u>Original Sample</u>	<u>Spike Recovery</u>	<u>Qualifier</u>	<u>Compound(s)</u>
CTS-02	< 10%	"J" ¹	Pyrene

¹ Positive values only were qualified as estimated "J" in the indicated samples.

Pest/PCBs - The following sample data were either qualified as estimated "J" or rejected "R" due to exceeding duplicate spike recovery QC criteria:

<u>Original Sample</u>	<u>Spike Recovery</u>	<u>Qualifier</u>	<u>Compound(s)</u>
No qualification was required.			

A.2.2 Data Assessment (continued):

10. OTHER QC DATA OUT OF SPECIFICATION:

Full TCL - The following compounds were qualified as estimated "J" in the associated aqueous and/or soil/sediment field duplicate samples because the Relative Percent Difference (RPD) between the sample and field duplicate sample is > 50% for aqueous samples, or > 100% for soil/sediment samples:

<u>Compound</u>	<u>Matrix</u>	<u>% RPD</u>	<u>Associated Field Duplicate Samples</u>
-----------------	---------------	--------------	---

Data met the QC criteria.

The following soil/sediment/solid sample data (other than TCLP data) were either qualified as estimated "J" (% solids between 10-50%) or rejected "R" (% solids < 10%) because the sample contains more than 50% water:

<u>Fraction</u>	<u>Percent Solids</u>	<u>Qualifier</u>	<u># Compounds</u>	<u>Sample(s)</u>
-----------------	-----------------------	------------------	--------------------	------------------

Data met the QC criteria.

VOA - The following data were either qualified as estimated "J" or rejected "R" due to air bubbles in the VOA vial(s):

<u>Sample(s)</u>	<u>Qualifier</u>	<u># Compounds</u>
------------------	------------------	--------------------

No qualification was required.

A.2.2 Data Assessment (continued):

10. OTHER QC DATA OUT OF SPECIFICATION (continued):

The following compounds were qualified as estimated "J" in the indicated samples because the on-column amount of these compounds exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration Sequence:

<u>Fraction</u>	<u>Sample(s)</u>	<u>Compound(s)</u>
BNA	bis(2-Ethylhexyl)phthalate	CTS-01 ¹ , -03, -05, -07, -08, -09, -10 & 11 ¹ CTW-07 ¹ , -09 ¹ & -01 ¹
	Benzo(a)anthracene	CTS-04 ¹
	Chrysene	CTS-04 ¹
	Benzo(b)Fluranthene	CTS-04 ¹
	Benzo(a)Pyrene	CTS-04 ¹
	Pyrene	CTS-04 ¹ & CTS-06
	Butylbenzylphthalate	CTS-05, -08 & -10 CTW-07 ¹ , -09 ¹ , -01 ¹ & -04 ¹
	Di-n-octylphthalate	CTS-10 ¹
PCBs	Aroclor-1254	CTS-01, -03, -05, -07 & 11

¹ These samples were previously qualified as estimated "J" due to other QC criteria.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

Due to professional judgement, the following compounds were not transferred from the indicated dilution sample analyses to the undiluted sample analyses because the reported values of these compounds are either diluted out in the associated dilution sample analyses or are qualified as non-detected "U" due to blank contamination QC criteria:

<u>Fraction</u>	<u>Compound</u>	<u>Dilution Sample(s)</u>	<u>Dilution Factor</u>
-----------------	-----------------	---------------------------	------------------------

No qualification was required based on this criteria.

Due to professional judgement, the following positive data were rejected "R" due to possible carryover from a previous sample analysis that contained the compound(s) at high concentration(s):

<u>Fraction</u>	<u>Sample Compound</u>	<u>Sample Compound Concentration</u>	<u>Previous Sample Compound Concentration</u>
-----------------	------------------------	--------------------------------------	---

No qualification was required based on this criteria.

A.2.2 Data Assessment (continued):

12. CONTRACT PROBLEMS _____ NON-COMPLIANCE:

VOA: VOA analysis was not performed on wipe samples due to analytical problems with hexane preservatives.

BNA:

- 1) GPC Clean-up was not performed for wipe samples.
- 2) Labs failed to submit undiluted results for the sample CTW-03.
- 3) Internal Standard Perylene-d12 is below the lower limit in sample CTW-10, laboratory failed to reanalyze the sample.

PCBs: A multi component analyte Aroclor - 1254 was detected in most of the samples, but a matching multi component standard was not analyzed within 72 hours of the injection of the sample and within a valid 12 hour sequence. No qualification was required based on this criteria.

REP No.:
 0117
 PO No.:
 85146

CHAIN OF CUSTODY RECORD
 copy - original filed with organics report

WESTON
 IMAGES DESIGN CONSULTANTS

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
 EPA CONTRACT 68-W5-0019
 Phone: 908-225-6116 Fax: 908-225-7037

Matrix Box No.:	Preservative Box No.:
1. Surface Water	1. HCl
2. Ground Water	2. HN03
3. Leachate	3. Na2SO4
4. Rinse	4. H2SO4
5. Soil/Sediment	5. Other (Specify)
6. Oil	6. Ice Only
7. Waste	N. Not Preserved
8. Other (Specify)	* See Comments

Send verbal and written results to: Roy F. Weston, Inc., USEPA Region II START
 Suite 201, 1090 King Georges Post Road, Edison, New Jersey 08837-3703
 Attention: Smita Sumbaly, START Analytical Coordinator

Sample Number	Sample Collection MM/DD/YY/Time	Sample Matrix (Enter box #)	Conc. Low-L Mod-M High-H	Sample Type Comp-C Grab-G	Sample Preserv. (Enter box #)	EPA ANALYSIS				RCRA ANALYSIS			OTHER	
						VOA	ENH	PEST	PCB	TALCN	ENH	COR		REAC
						✓	✓	✓	✓					
CTS-001	9/19/97/0956	S	L	G	6	✓	✓	✓	✓	✓				272610
CTS-002	1000													MS/MSD 27
CTS-003	1015													272612
CTS-004	1020													272613
CTS-005	1027													272614
CTS-006	1030													272615
CTS-007	1037													272616
CTS-008	1036													272617
CTS-009	0950													272618
CTS-010	0956													272619
CTS-011	0956	✓	✓	✓	✓	✓	✓	✓	✓					272620

Comments: 273706 - Refrigerator Blank
 2.8°C

Person Assuming Responsibility for Sample:					Time	Date (MM/DD/YY)
M. Mahoney					1325	9/19/97
Sample Number	Relinquished By:	Time	Date	Received By:	Reason for Change of Custody	
ALL	M. Mahoney	1725	9/19/97	[Signature]	Transfer to LAB	
Sample Number	Relinquished By:	Time	Date	Received By:	Reason for Change of Custody	
ALL	[Signature]	1845	9-19-97	Christina M. [Signature]	RECEIPT AT LAB	
Sample Number	Relinquished By:	Time	Date	Received By:	Reason for Change of Custody	

Roy F. Weston, Inc.
 FEDERAL PROGRAMS DIVISION
 In Association with Resource Applications, Inc., R.E. Sarriera Associates, PRC Environmental
 Management, C.C. Johnson & Malhotra, P.C., and GRB Environmental Services, Inc.

START DATA SIGN-OFF SHEET

Task/Site: Coloos Technology

TDD #: 9709-0013

PCS #: 2117

Sampling Date: 09/19/97

Date Received: 10/14/97

DCN #: START-02-F-1540

Lab: ICM

Matrix: Soil
Wipe

Samples: 11
10

Analysis: FULL TCL & TAL
FULL TCL & TAL

DATA PACKAGE CHAIN OF CUSTODY

RELINQUISHED BY:			RECEIVED BY:		
Signature:	Date:	Fraction:	Signature:	Date:	Fraction:
<u>Smrita Sumbal</u>	<u>11/07</u>	<u>Inv (SW)</u>	<u>Smrita Sumbal</u>	<u>11/07</u>	<u>Inv (SW)</u>
<u>Smrita Sumbal</u>	<u>11/07</u>	<u>10g SWC</u>	<u>Smrita Sumbal</u>	<u>11/07</u>	<u>10g SWC</u>

1. ☒ Data Reviewer

Smrita Sumbal
Name

12/17/97
Date

2. ☒ Group Leader/Peer Review

Bruce M. L.
Name

12/17/97
Date

3. ☐ Approval (Group Leader/ATeam Mgr.)

Jim Loe
Name

12/17/97
Date